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AFRICA CLEAN ENERGY CORRIDOR – An IRENA initiative

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International Renewable Energy Agency (IRENA)

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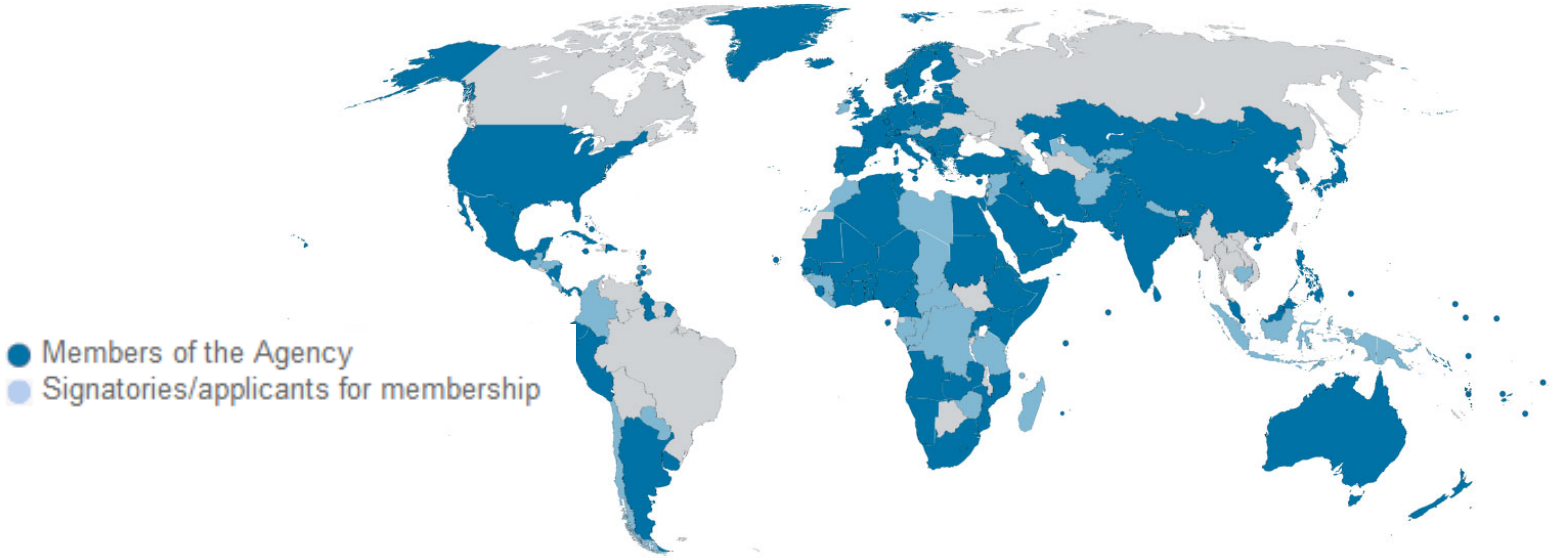
- IRENA has headquarters in Abu Dhabi, United Arab Emirates. Innovation and Technology Centre (IITC) in Bonn, Germany.
- **Established**: April 2011
- **Mandate**: Biomass, Geothermal, Hydro, Ocean, Solar, Wind
- **Membership**: 132 Members; 37 Signatories/States in accession (as of July 2014)

Mission: Accelerate deployment of renewable energy



Mission, Vision & Mandate

About IRENA

Mission: Promote the widespread and sustainable use of renewable energy worldwide

How: Serve as centre of excellence, advisory resource, and network hub for renewable energy

Scope: All renewable energy sources

Bioenergy | Geothermal Energy | Hydropower | Ocean Energy | Solar Energy | Wind Energy

IRENA: Programmatic Structure

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Knowledge, Policy and Finance Centre (KPFC)

- ✓ IRENA's Central Knowledge Repository
- ✓ Renewables Policy and Finance
- ✓ Data Collection and Analysis

- **Global Atlas and Resource Assessment**
- **International off-grid RE conf.**
- **RE Socio-economic Impacts**
- **Policy Adaptation to Market Conditions**
- **RE Target Setting**
- **Impact of Energy Pricing on RE Deployment**
- **Environmental Impact of Large Scale RETs**

IRENA Innovation and Technology Centre (IITC)

- ✓ Cost & Performance
- ✓ Technology Solutions
- ✓ Technology Roadmaps

- **RE Costing Analysis**
- **RE Technology Roadmaps**
- **Project Navigator**
- **Dynamic Modelling & Grid Stability Studies**
- **RE Standardisation**

Country Support and Partnerships (CSP)

- ✓ National & Regional RE Strategies
- ✓ Renewables Readiness Assessment (RRA)
- ✓ Capacity Needs Assessment & Capacity Building

- **RRAs in up 8 countries in 2013**
- **Africa Clean Energy Corridor**
- **GREIN: Global Islands Network**
- **Geothermal in ANDES**
- **Capacity Building Programmes**
- **Online Learning Portal (IRELP)**

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Global Status of Renewable Energy

Global Renewable Energy Installed Capacity

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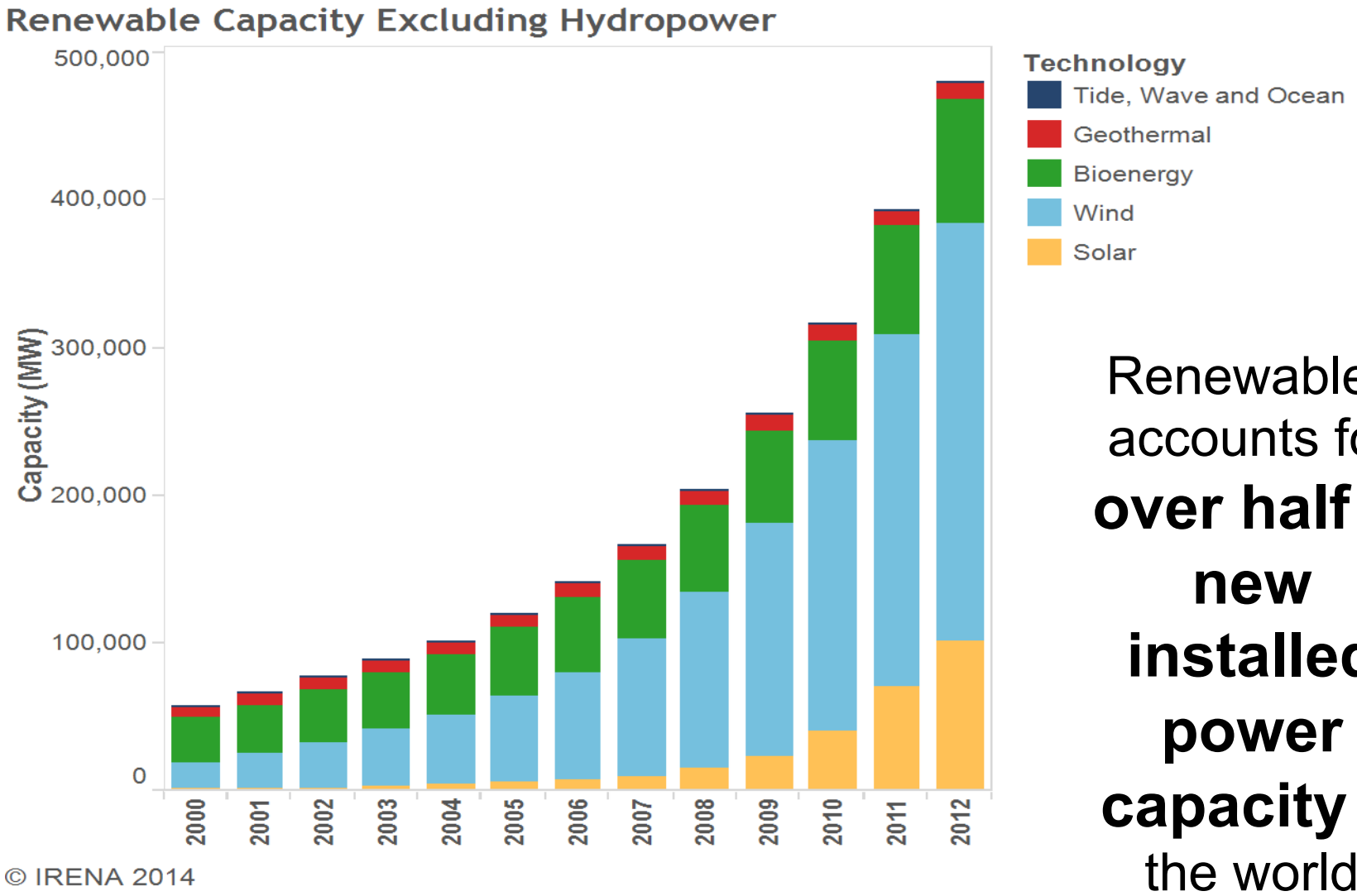

Renewables accounts for **over half** of **new installed power capacity** in the world

Global Investment in Renewable Energy

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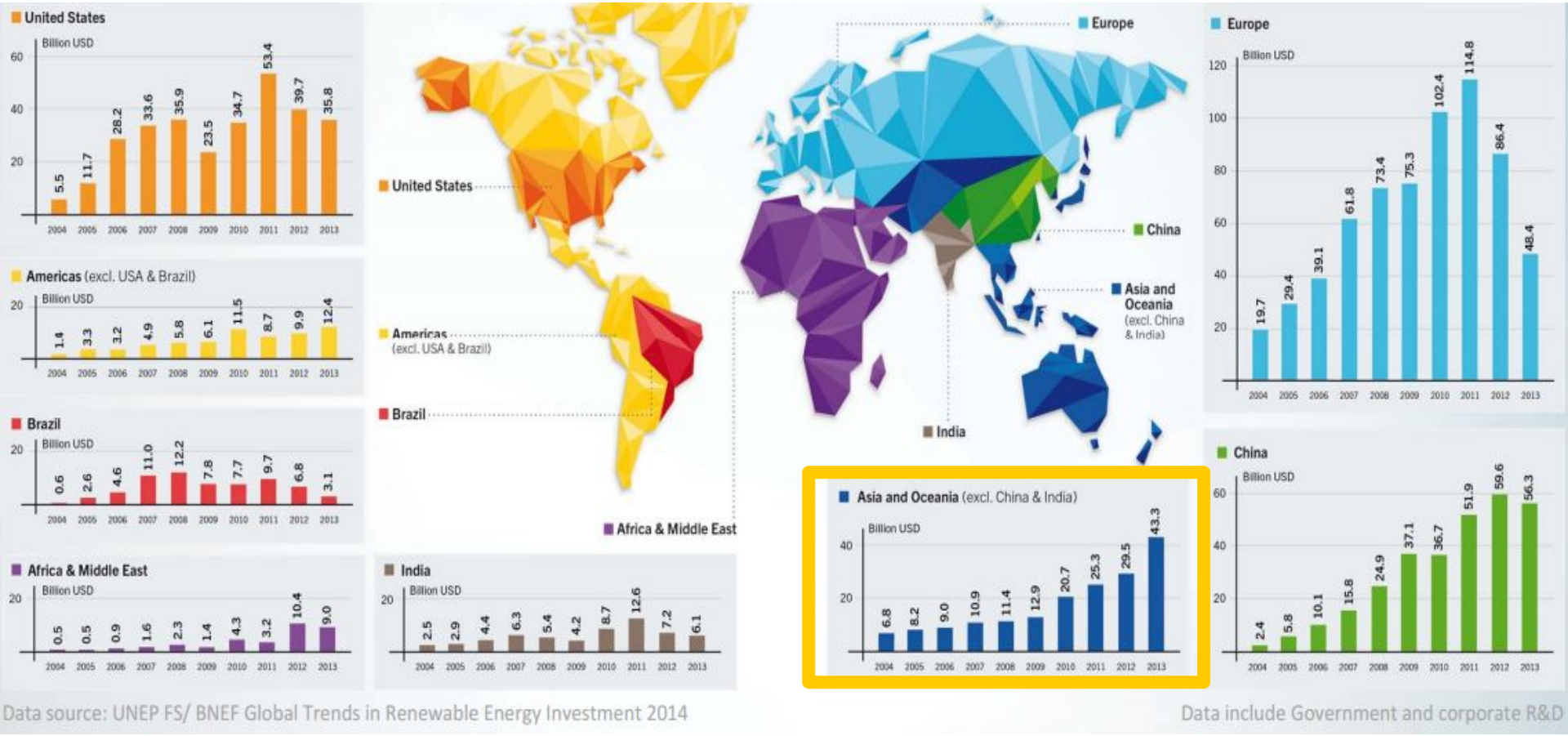

For the **investment continues shifting** from developed (USD 93bn) **to developing economies** (USD 122bn).

Investments in renewables

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Source: REN21 Global Status Report 2014

Costs for Renewable Power Options

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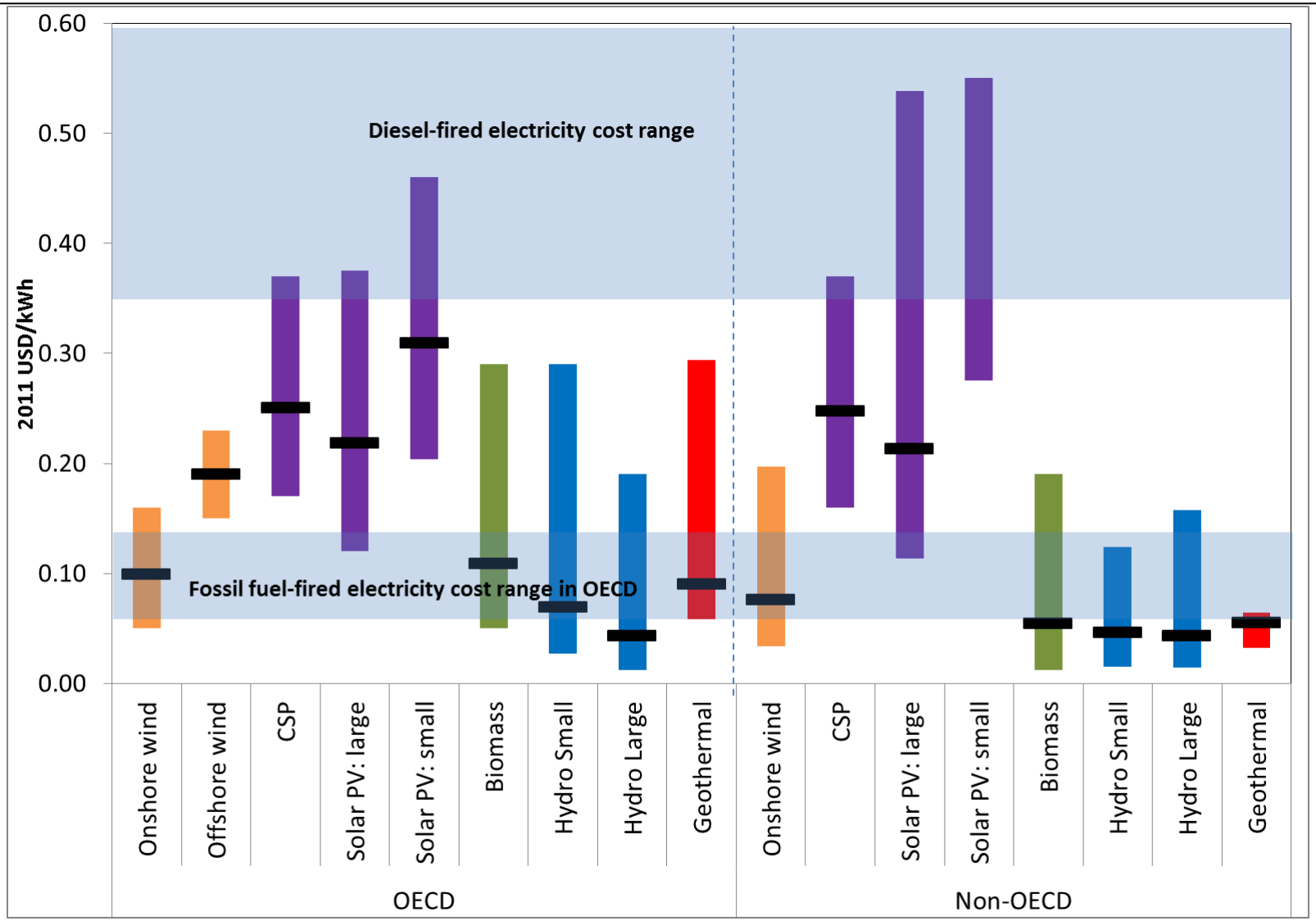

Note: assumes a 10% cost of capital

Source: IRENA

Renewable Energy Policies

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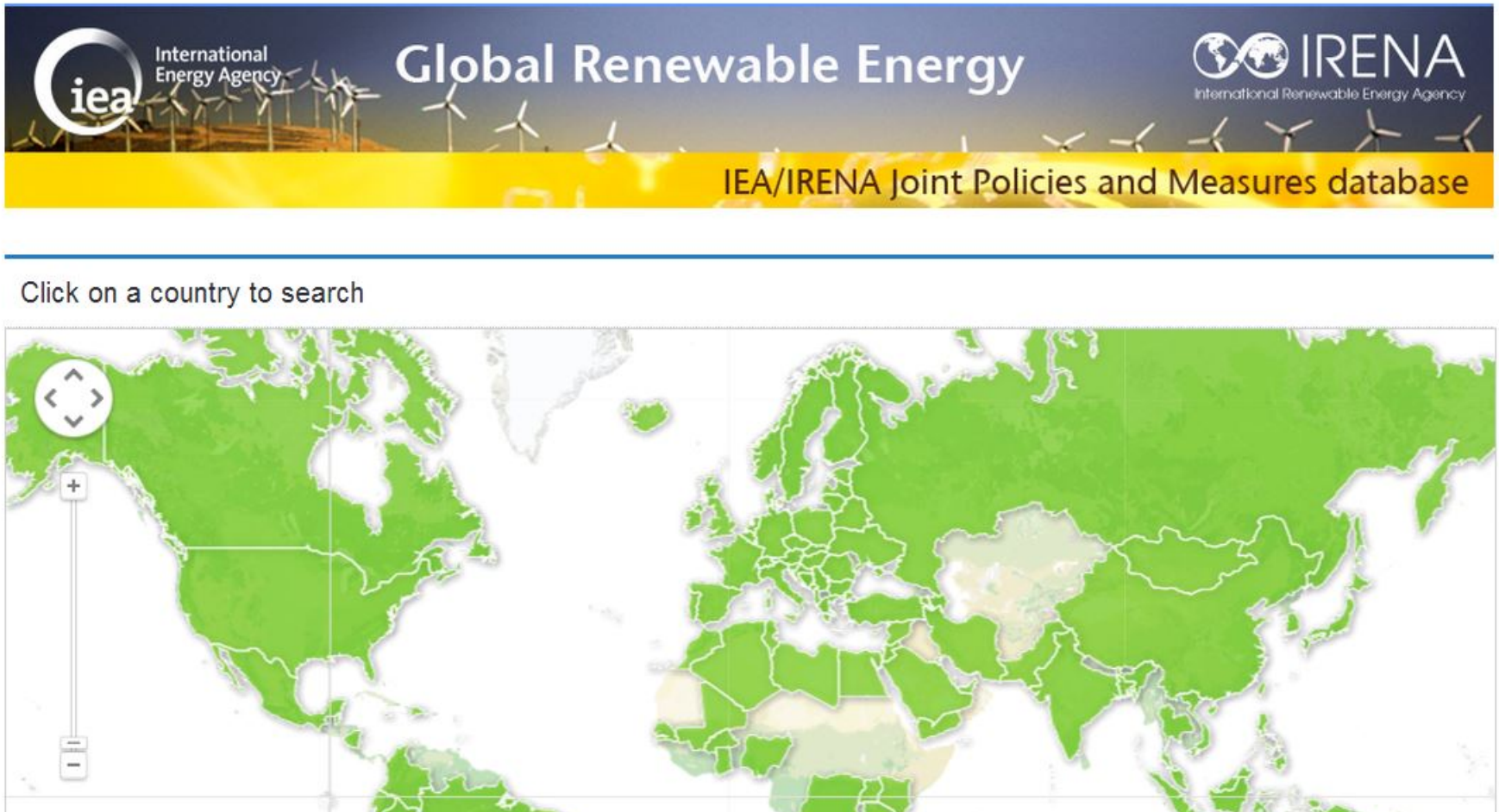
At least **138 countries** have support **policies** in place for **renewable energy**, out of which 95 are developing countries.



IRENA's Flagship Activities

REmap 2030
A Renewable Energy Roadmap

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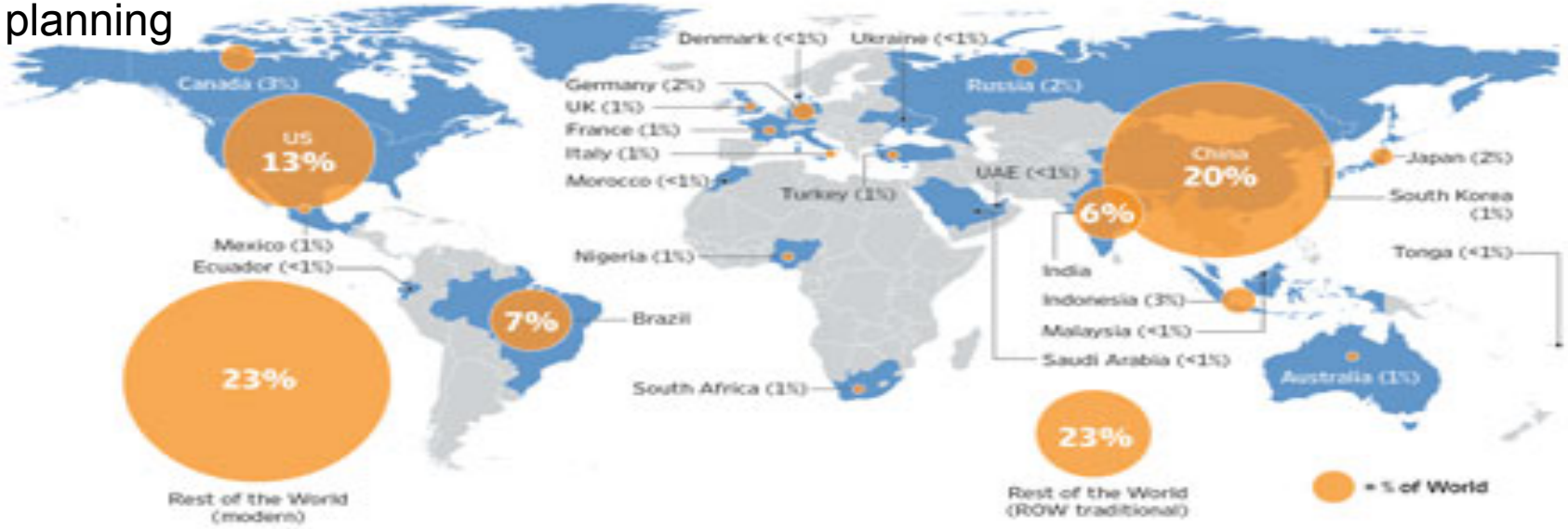
- Remap 2030 is a bottom-up analysis based on official national sources of 26 countries that account for ¾ of global energy demand in 2030

- It determines realistic potential to double the share of RE by 2030 and focuses not only on technologies but also the required financial mechanisms, policies, skills and planning



Breakdown of total global renewable energy use in REmap 2030 (%)

Shares of renewable energy consumption in select countries in 2030 based on IRENA's Renewable Energy Roadmap – REmap 2030

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REmap 2030
A Renewable Energy Roadmap

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Key Findings

- Global RE share can reach and **exceed 30% by 2030** and reach 36% through Energy efficiency and improved energy access.
- Business-as-usual will only result in an increase of this share **from 18% in 2010 to 21% by 2030**.
- As the use of traditional biomass decreases, the share of modern renewables will more than triple.
- Renewables growth needs to take place across all four sectors of energy use: **buildings, transport, industry, and electricity**.
- Transitioning towards renewable energy is possible at negligible additional cost. The economic case for the renewable energy transition is even stronger when we include socio-economic benefits, switching to renewable energy results in savings of up to **USD 740 billion per year by 2030**.
- Deployment of renewable energy can reduce annual **CO2 emissions by 8.6 Gt** by 2030.

GlobalAtlas
FOR RENEWABLE ENERGY

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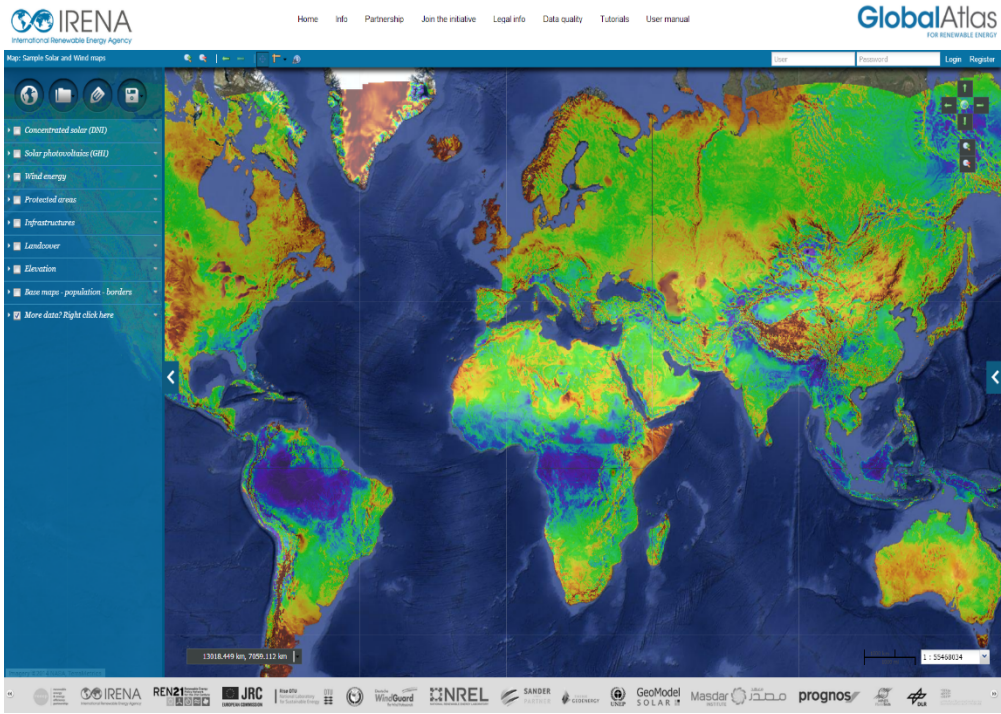
A free, open source, open standards **Global Spatial Data Infrastructure**

- A global public library of renewable resource maps – 400 + datasets included
- The information is not copied or duplicated, and existing services are integrated
- Over 1000 registered maps in the Global Atlas catalog
- 67 countries and over 50 research institutes
- Over 50, 000 users
- Maps at the moment cover solar, wind, geothermal and biomass
- To include maps for hydropower and marine resources from 2015



globalatlas.irena.org

IOREC
International Off-Grid Renewable Energy Conference & Exhibition

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IOREC I, *1-2 November 2012, Accra (Ghana)*
IOREC II, *16-17 June 2014, Manila (Philippines)*

- Biennial conference with focus on scaling up of rural electrification in developing countries through deployment of off-grid systems (mini-grid and stand-alone)
- Platform to share experiences, lessons learned and best practices from across the developing world
- Identification and discussion of key barriers to scale up off-grid RE

IOREC International Off-Grid Renewable Energy Conference & Exhibition

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Key Messages

- **A market-based approach** to off-grid renewables is critical to scale-up deployment sufficiently enough to achieve universal electricity access.

- **Enabling private sector** participation and attracting the necessary investments into the sector will be challenging in markets where political priorities are misaligned and market-distorting factors, such as kerosene subsidies, are prevalent.

- **Rural electrification initiatives and business models** need to accordingly be prepared to support households and enterprises in their journey upwards on the energy ladder.

- **Typical lending models** do not apply to the off-grid sector and innovation in designing financing frameworks will be necessary to unlock further capital for the sector while giving adequate flexibility to enterprises in designing and implementing projects

- **Capacity building** efforts need to be directed at all stakeholders in the deployment value chain- public agencies, financing institutions, international organisations, entrepreneurs, regulators, grid operators

Renewable Energy Employment

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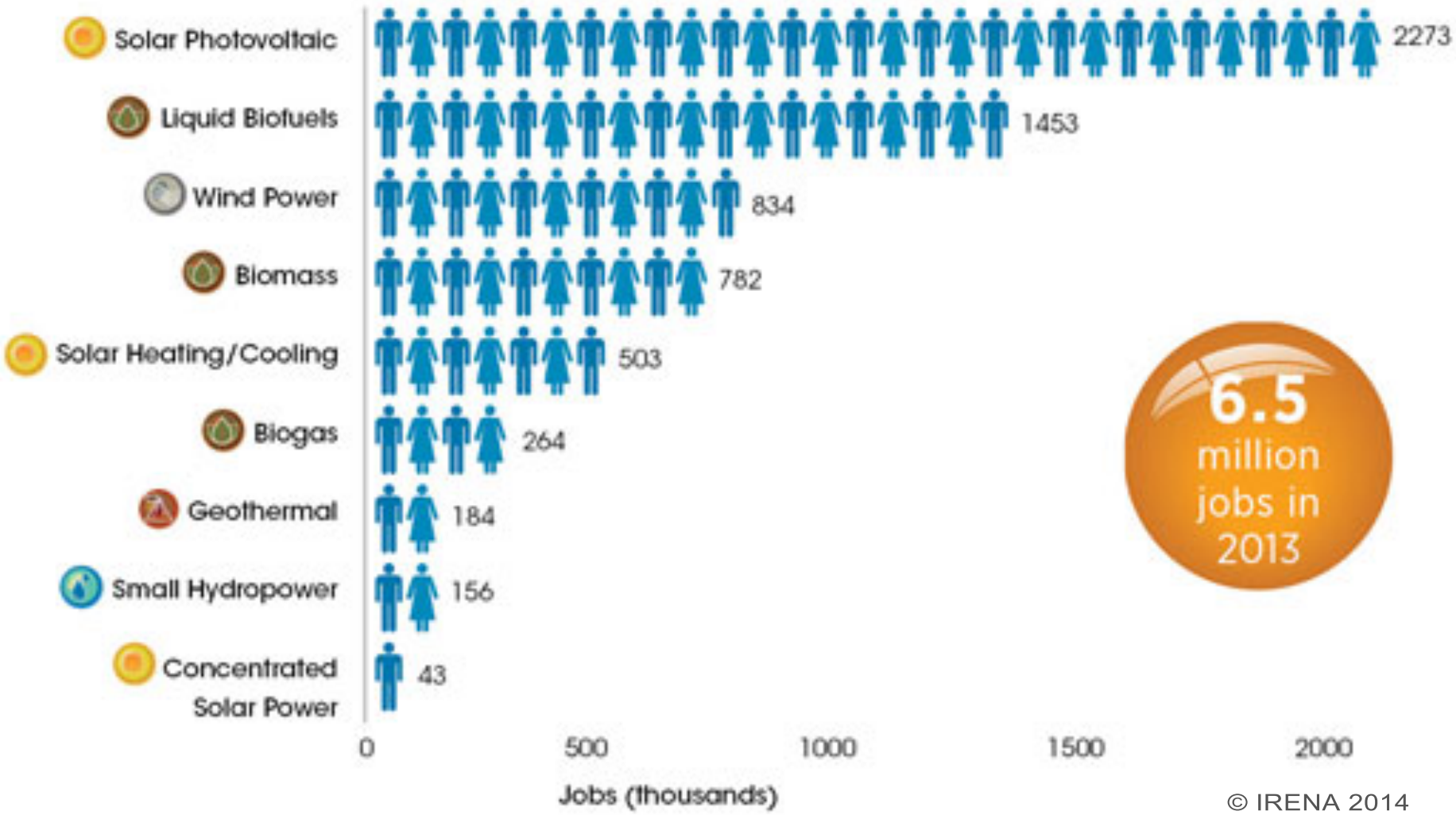

Renewable Readiness Assessments (RRA)

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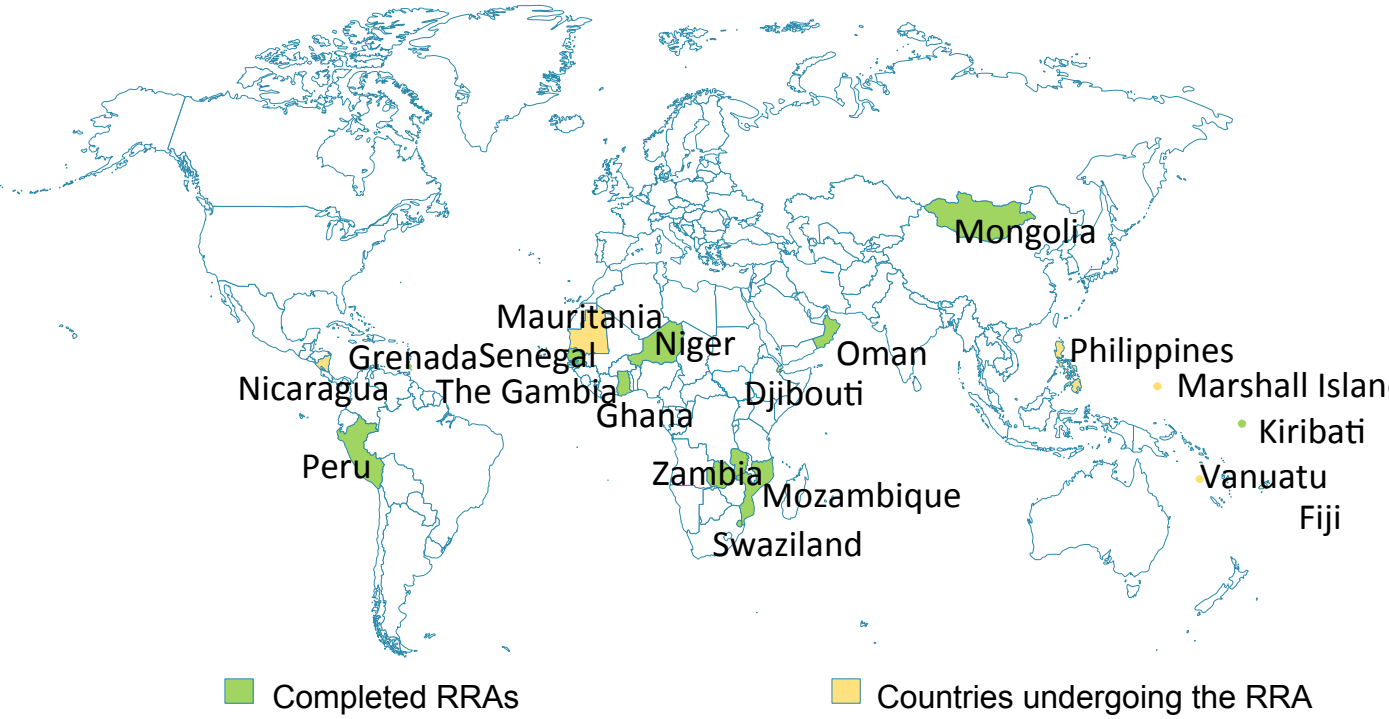
Renewables Readiness Assessments for countries

- A country driven process
- Assessing key policies, potentials and technologies for renewable energy deployment
- Identifying actions necessary to create an enabling policy and decision-making framework



Renewable Readiness Assessments (RRA)

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Renewables Readiness Assessments for countries

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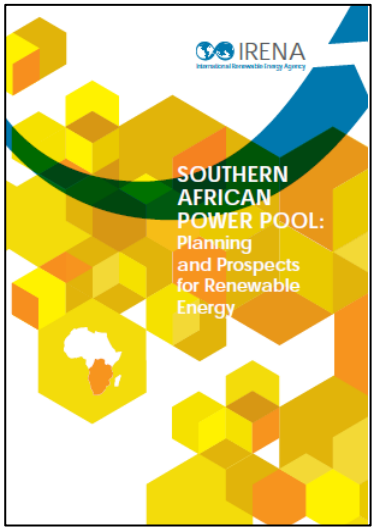
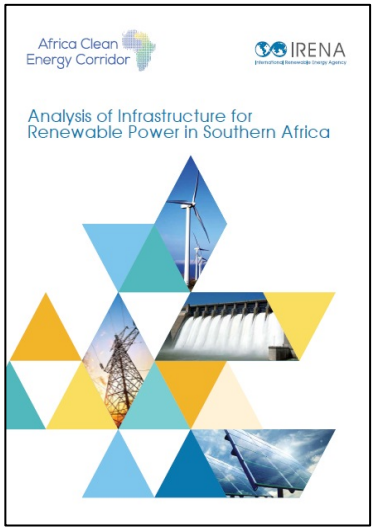
→ **Shaping of IRENA's regional initiatives**

Such as the Africa Clean Energy Corridor





ACEC Concept and framework

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ACEC VIDEO TO BE INSERTED

IRENA's ACEC activities

- **RE Zones identification**
  - Working with Lawrence Berkeley National Laboratory (LBNL)
  - Validation workshops on RE Zoning methodology with key stakeholders
  - Capacity Building workshops on RE Zoning with key stakeholders in the EAPP and SAPP regions.
- **Enabling frameworks for investment**
  - enhance regional regulator's capacity to nurture an enabling regulatory environment to attract renewable energy investments
  - benchmark existing financial structures and synthesise best practices for reducing capital costs
- **Supporting frameworks for coordinated regional planning and operations.**
- **Developing skills for the renewable electricity supply sector**
  - RE Zoning and resource assessment
  - Practitioners' Guide to Grid Integration of RE
- **Public awareness and outreach**
  - Abu Dhabi Ascent to Climate Summit May 2014
  - Climate Summit, New York, September 2014

ACEC Political commitment

June 2013
ACEC Executive Strategy Workshop

January 2014
Ministerial meeting

May 2014
Abu Dhabi Ascent Climate Summit 2014

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Thank You

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